

REMARKS/ARGUMENTS

Favorable consideration of this application in light of the following discussion is respectfully requested.

Claims 1-18 are pending in the application with Claims 9-10 amended by the present amendment.

In the outstanding Office Action, Claims 9 and 10 were rejected under 35 U.S.C. § 112, second paragraph; and Claims 1-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Mori et al. (U.S. Patent No. 6,242,825) in view of Igashira et al. (U.S. Patent No. 4,471,256).

Applicants acknowledge with appreciation the personal interview between the Examiner and Applicants' representative on December 13, 2004. During the interview, the Examiner acknowledged that Applicants' amendment to Claims 9-10 overcame the outstanding rejection under 35 U.S.C. § 112, second paragraph. The Examiner also acknowledged that both Mori and Igarashi fail to disclose or suggest "an adhesive containing glue insoluble in [an] impregnated resin" as recited in Applicants' originally filed independent Claims 1, 2, 13, and 16.

Applicants request acknowledgement of their Information Disclosure Statement filed on April 5, 2004.

Briefly recapitulating, Claim 1 is directed to a coil for an electric rotating machine, The coil includes a) a conductor configured by bundling a plurality of square strands and stacking the square strands like a coil with Roebel transposition; b) mica tape which is wound a plurality of layers around on surface of the conductor and made up of mica paper and cloth backing material; c) an insulation layer formed with impregnating and curing resin between wound layers of the mica tape; and d) inorganic particles supported with the mica tape using

an adhesive containing glue insoluble in the impregnated resin as a component. Independent Claims 2, 13, and 16 are directed to alternative embodiments of Applicants' inventions that include inorganic particles which are supported by a mica tape or a cloth backing material of the mica tape using an adhesive containing glue insoluble in the impregnated resin as a component. The claimed inventions provide for improved thermal conductivity.<sup>1</sup>

Mori discloses a stator coil of electric rotating machinery.<sup>2</sup> This stator coil is substantially the same as that described in "Description of the Related Art" of the Applicants' specification. Limitations of a conventional stator coil are described in the specification, page 7, line 19 through page 9, line 6 and will be specifically discussed below.

Mori discloses two methods for insulating the stator coil. The first method of Mori is directed to a resin-rich insulation molded by hot plate pressurizing or molded by liquid compound pressurizing. Hot plate pressurizing is performed by winding a semi-cured mica tape containing an adequate amount of resin around a conductor a plurality of times and then molding and curing the mica tape layers by heat pressing using a hot plate. Liquid compound pressurizing is done by attaching a molding jig and pressing and curing the mica tape layers at the same time using a liquid compound. The second method of Mori is directed to vacuum pressure impregnation insulation that is performed by winding a mica tape containing a small amount of resin around a conductor a plurality of times, then impregnating the resin into the layers of the mica tape by vacuum pressure impregnation, then attaching a jig to the stator coil for pressure molding, and curing the mica tape layers.

Applicants' claimed inventions represent an improvement to the convention methods of vacuum pressurized impregnation insulation. Conventionally, in a vacuum pressure impregnation insulation method using inorganic particles, the inorganic particles are supported by a mica tape using an adhesive, where an impregnating resin is impregnated into

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<sup>1</sup> Specification, Figures 4-5.

<sup>2</sup> Mori, abstract.

the mica tape layers wound around the conductor and then cured to form an insulation wall. The adhesive requires mutual dissolubility to be formed integrally with the impregnated resin. In the conventional resin impregnation process, therefore, the adhesive and impregnated resin are mutually dissolved and at the time of the above pressure molding the impregnated resin is squeezed and the inorganic particles flow out of the adhesive dissolved in the remaining resin. The insulation wall therefore decreases in thermal conductivity.

However, in the present invention, the adhesive contains glue *insoluble in the impregnated resin* even though the adhesive requires dissolubility to be formed integrally with the impregnated resin. With Applicants' claimed inventions, it is therefore possible to prevent the inorganic particles from flowing out while maintaining the dissolubility of the adhesive. As noted in the Official Action, Mori does not disclose or suggest "inorganic particles supported with the mica tape using an adhesive containing glue insoluble in the impregnated resin as a component" as recited in Applicants' independent claims.

Igashira discloses a piezoelectric actuator in which an adhesive containing polyvinyl alcohol and other adhesives are used as one for combining particles into a predetermined shape. However, as acknowledged by the Examiner during the interview, the adhesives of Igashira does not disclose or suggest an "adhesive containing glue insoluble in the impregnated resin as a component" as recited in Applicants' independent Claims. Igashira only discloses uses of an adhesive containing polyvinyl alcohol. -

As none of the cited prior art, individually or in combination, disclose or suggest all the elements of independent Claims 1, 2, 13, and 16, Applicants submit the inventions defined by Claims 1, 2, 13, and 16, and all claims depending therefrom, are not rendered obvious by the asserted prior art for at least the reasons stated above.<sup>3</sup>

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<sup>3</sup> MPEP § 2142 "...the prior art reference (or references when combined) must teach or suggest **all** the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of

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Reply to Office Action of April 29, 2004

Accordingly, in light of the previous discussion, Applicants respectfully submit that the present application is in condition for allowance and respectfully request an early and favorable action to that effect.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



Eckhard H. Kuesters  
Attorney of Record  
Registration No. 28,870  
Michael E. Monaco  
Registration No. 52,041

Customer Number  
**22850**

Tel: (703) 413-3000  
Fax: (703) 413 -2220  
(OSMMN 006/04)  
EHK/MEMO/KKN  
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success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)."